

THE MOTOR AGE

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PHILADELPHIA'S BIG CELEBRATION

QUAKER CITY AUTOMOBILISTS CELEBRATE THE OPENING OF FAIRMOUNT PARK BY A BIG PARADE WHICH PASSES OFF WITHOUT A HITCH—MANY MOTORISTS HAVE SECURED THE NECESSARY "TAGS"

Philadelphia, Oct. 8.—To celebrate their victory in securing the passage of the ordinance to throw the park roads open to all classes of horseless vehicles and to demonstrate to the public the growth of the automobiling "habit," the officials of the Pennsylvania Automobile Club and of the Automobile Club of Philadelphia set apart last Saturday afternoon for a parade of self-propelled vehicles, and in order to make the exhibition

more impressive an invitation was extended to all "unattached" motorists to participate. To say that the success of the affair exceeded the most sanguine expectations of its promoters is but stating the truth, for your correspondent was informed early in the week that if two-score vehicles were in line the projectors of the turnout would be entirely satisfied. But when at 3 o'clock, the hour of starting, no less than eighty-nine

vehicles of all descriptions had been assigned places in the line, Marshal John S. Muckle was radiant.

The rendezvous was at Board and Walnut Streets, and long before the hour of starting this vicinity was alive with "auto" pleasure vehicles of every conceivable type, gyrating over the smooth asphalt and showing their fine points, to the delectation of a huge and rapidly-growing crowd. At 3:02 p. m. Ensign A. W. Russell, Jr., U. S. N., who occupied a seat in Marshal Muckle's wagon, sounded the advance upon a cornet, and in a few minutes the entire line was in motion. An order had been issued to allow at least thirty feet between vehicles and when the countermarch to Pine street and return had been completed, and the long line had wound round the city hall and straightened out for its trip parkward it was seen that the parade was but little short of a mile in length. The fact that the majority of the vehicles contained ladies lent an air of gaiety to the procession, and the crowds of people who lined the sidewalks were noticeably denser than those which had witnessed the parade of trotting horses the previous Saturday. It was a record breaking day for the Quaker autofans.

A Pleasing Demonstration

After passing the city hall, the parade, with the usual leading attraction—a platoon of mounted police—but no band, proceeded north on Broad to Diamond Street, thence west to the park, at the entrance of which the equine "guard of honor" gave place to the park bicycle police squad, who led the way down Dairy Hill to the River Drive and thence up that much-traveled highway (which, by the way, was fairly alive with fashionable teams and mettlesome steeds) to the Park Trolley Bridge. Just here it is proper to say that Park Commissioners David F. Sellers and Samuel Gustine Thompson, who occupied prominent places in the procession, were treated to a practical exposition of what automobiles will not do to horses when they meet them in the park—or anywhere else. Equines and autos alike showed

themselves to be extremely docile, and as tractable as the veriest old Dobbin.

Climb a Stiff Hill

At the foot of the long hill, where City Line Road climbs up out of the Schuylkill Valley, a 10-minute stop was made to allow all hands to store up plenty of energy for the mile-and-a-quarter pull. Some few of the machines got into trouble before reaching the top of the hill; but the officials of the parade had had the forethought to call a halt on reaching the top, and when the majority of the participants had reassembled the return was made through the park and across Girard Avenue Bridge to Spring Garden Street, thence to Broad Street and the city hall, where the parade was dismissed.

Reviewed By the Mayor

On the River Drive, Mayor Ashbridge, astride a handsome big bay horse, was encountered. Quickly wheeling his steed to the side of the road, the mayor (his mount meanwhile standing as docile as a kitten) informally reviewed the long line of glittering automobiles, bowing constantly right and left to many acquaintances among their occupants. Ex-Mayor Stokley, one of the park commissioners, also stopped his team of spirited horses to enjoy the novel sight. It was a grand object lesson to those who had been fighting so hard to keep the automobilists out of the park.

Parade in Five Divisions

The parade was in five divisions, each under the command of an aide appointed by Marshal Muckle. Leon Goodman, of the Pennsylvania Automobile Club, had charge of the First Division; John L. Wilson, of the Automobile Club of Philadelphia, of the second; Henry J. Johnson, P. A. C., the third; Frank C. Lewin, A. C. P., the fourth, and Dr. F. L. Sweany, P. A. C., the fifth.

Steam Vehicles Predominate

There was a preponderance of steam vehicles in line, Mobiles and Locomobiles being specially in evidence. Gasoline came next, although there were quite a good many electrics in the procession. In seating capacity, the vehicles

ranged from a big electric accommodating six to the gasoline tricycle with a single occupant. A smallish looking turnout, with wicker body, looked as if it could hardly hold its two occupants, but it sailed merrily along with the rest of them. There were several home-made freaks in line, and it is a peculiar feature that nearly all of them were stalled on the big hill on the other side of the Schuylkill.

A trifle fewer than 200 persons occupied the eighty-nine vehicles in line, and altogether the turnout was a worthy celebration of the release of our Quaker automobilists from the nonsensical restrictions of the all-powerful Fairmount park commission.

Many Tags Issued

Upwards of fifty motorists have already complied with the rule of the park commission requiring the carrying of numbers on the rear of their vehicles, although the regulation does not go into effect until the 15th of the present month. These numbers are painted in white upon a black leather tag and are supplied by the commission free of

charge. The commission has decided not to run any chances, and the tag bearing the fateful number "13" was unceremoniously cut to bits and consigned to the waste paper basket.

Tags for Public Cabs

The local companies which hire out "auto" cabs and hansoms have applied for these tags, for visitors to the city invariably take a "trip through the park"—in fact, no well-regulated newly-married couple ever came to Philadelphia without examining its popular pleasure through the medium of a public conveyance of some character. "Bob" Garden was extremely anxious to secure "No. 1" tag, but James Elverson, owner of the Inquirer, stole a march on him, and he had to be content with "No. 5." Some of the city fathers are agitating the question of compelling "autos" to wear their numbers at all times, arguing that fast driving is as possible on the city streets as on the park roads, and that as a means of identification in the case of fractures of the municipal speed laws the tags are just as necessary in the city as in the park.

AN AUTOMOBILE TOUR

W. H. Moore and son of Watertown, N. Y., have returned from their automobile tour. They are very enthusiastic over the new mode of traveling and think nothing could be better to take the mind from business and give such a perfect and delightful change and rest than a tour on an automobile.

Describing the trip, Mr. Moore said to a Watertown Standard man:

"The condition of the roads most of the way to Utica would not admit of very fast riding and below Utica repairs being made on the road necessitated a ride on the tow path, much to the disgust of the few canal boat drivers, men who it was very evident were not brought up in a Sunday school.

"The ride in the Mohawk valley with

the fair grounds close to the track of the N. Y. C. railroad, the beautiful scenery, the constant passing of all kinds of trains, the kindly salute of the engineer, train hands and passengers all combined to make that part of the trip enjoyable. The ride into Utica after dark over roads being repaired and after a heavy rain was rather slow and when we stopped in mud six inches deep to pump up a little more air pressure, a big covered wagon full of children returning from a picnic passed by. One of the children sang out, 'Auto, but don't go.' The chorus was the same and heartily sung by that whole crowd of children was one of the experiences. We got even with those irreproachables as we flew past them a few minutes later where

they had stopped to mend a broken harness.

"From Amsterdam we were told we could take a short cut to Saratoga, providing our machine could climb a big hill. We went that way but would not advise any one else to do so. That hill is a bad one. The timbers built in to keep the water from the road are so high that the rubber wheels of our machine would strike them and bound back, but we got there and found a very fair road and very hospitable people from the top of that hill to Saratoga. It was pleasant to meet almost every time we stopped some one who has relatives or acquaintances in Watertown and to receive without one exception such cordial, true hospitality all through the country. One thing is certain; the nice people don't all live by the side of the railroad and if you want to know some of them just turn your automobile into a beautiful grove on a bright, hot summer afternoon and finding you are entirely out of gasoline get the farmer's boy to hitch up and go to town for it. Then lay on the grass for a few hours joined by a farmer and his family. Another thing is certain and that is that not all farmers send their best eggs and bread and butter to market.

"The roads about Saratoga are fine. The village has expended over \$40,000 the past year on their streets making fine roads. The lake drive is four miles and across a rickety toll bridge where one pays five cents for the privilege of bumping over it. We found it a beautiful drive on the shore of Saratoga lake for about five miles. Here on the nar-

row road we met a spirited team with a young lady driver with a party of three ladies, two children and baby. The horses rolled up their eyes at our machine, gave a jump into the air, took a half circle on their hind feet and turned that precious load completely around without a break. The ladies and children screamed, the horses now held by me quieted down and the old harness was found broken where a small wire had mended an old break. We found in our machine some wire and made the old harness stronger than before, but prevailed on the ladies to return home, about one-half mile back, and not to venture forth with such a harness on a team such as this. They said they had run away once.

"Ninety-nine out of a hundred horses will pass us all right but unfortunately the odd one we met just out of Ballston Springs, Dr. Royal, of Ballston Springs, with his wife in a buggy. The horse performed the same act as the team at Saratoga, but when he turned, the buggy wheel collapsed and the horse could not be held. The only thing in sight was the fine remains of a nice buggy and four people unhurt.

"We spent all our available time about Saratoga and regretted to stop. Having business in Watertown we stored the machine in Schenectady and in a few days will return there by train and continue down the Hudson. We find our running time was about ten miles an hour over fair country roads and over good roads just as fast as we could safely ride. We passed every team in sight on any road. The automobile has 'come to stay.'"



HOW IT FEELS TO RACE

A REPRESENTATIVE OF THE MOTOR AGE RECORDS HIS FEELINGS AS A PASSENGER IN A RACING MACHINE—OTHER NEWS OF THE MOTOR WORLD FROM VARIOUS SOURCES

Cleveland, Oct. 8.—Whew! No more automobile races for this child. This evening after leaving his den your correspondent discovered an aggregation of motor-vehicles in front of the Chamber of Commerce Building and, this being the headquarters of the Cleveland Automobile Club, he proceeded to investigate. The club was just closing its session, and, incidentally, it may be added that its members had decided to have nothing to do with the proposed automobile race to be held on the public square during "Home Week." Others will participate, however.

The majority of the C. A. C. members live out Euclid Avenue, and the scribe's route lays in this direction also.

"I will take you home," said Frank Stearns, of the F. B. Stearns Co., adding in an undertone: "I want you as a witness."

The Race Begun

It sounded significant of something, but the newspaper man accepted. He would not have done so had he known what was coming.

Several machines started off, the leader being George S. Weise, in his twelve-horsepower Packard racing machine. Stearns' machine is one of his own make, rated as thirteen-horsepower. He claims it is faster than anything in Cleveland except Winton's famous racer. For some reason the motor failed to start at the first impulse and Weise was out of sight before we got under headway. It was nearly midnight, but the main streets were crowded. Stearns does not care for people, street cars, cobble stones or anything when there is a machine ahead of his. He has the reputation of being the most reckless driver in Cleveland. The writer has ridden with Winton, but Stearns can show the veteran tricks in dodging obstacles. Over car tracks, around carriages and street cars we tore

at top speed. Once we brushed flies off the running board of a trolley car. A patrolman ran into the center of the street waving his baton, but he took care to evacuate before the flying machine reached him. The newspaper man held on the seat with one hand while with the other held his hat from being lifted off his head by the upward tendency of his hair. Soon the pursued was in sight; it was evidently making its best speed. Every few seconds Stearns would ask: "Are we gaining?" For a short time it seemed doubtful. The operator manipulated the air supply valve and the speed increased perceptibly. We were moving close to thirty miles an hour, which is much too fast for comfort when traveling over bad pavement. Slowly but surely the distance between the two machines decreased. The throttle valve was pressed to the lowest point and at Wilson avenue, three miles from the square, we caught them. There was a street car abreast of the other machine and it seemed hardly three feet between them.

A Narrow Squeeze

"I will have to go through there," laconically remarked the man at the helm.

"For heaven's sake—" gasped the passenger. But we were through before he could finish.

For another half-mile they caught our dust and then they quit.

"He beat me the other day, but I fooled him that time," remarked the victor.

The racing fever has struck the C. A. C. members with a vengeance and there are hints that some new flyers are to make their appearance in the near future. Club runs have degenerated into impromptu road races and some of the slow fellows are objecting strenuously.

A Local Celebration

Cleveland is having a "home week" celebration this week and the city is crowded with visitors, the majority of

them from the rural districts. One of the chief features of the program and the one which is said to have attracted more farmers than any other single event, is an automobile race, to take place the latter part of the week. The promoters of the big affair are the leading tradesmen of the city and they want to attract as much attention toward their district as possible, so they have decided to have the automobile race take place around the public square in the center of the city. Just how they expect the competitors to go faster than a snail's pace is not explained. That will probably be the gait in view of the fact that the "square" measures less than one-eighth of a mile on a side, most of the pavement is the worst in the city and the course is crossed and recrossed by every street railway line in the city, to say nothing of the several hundred thousand people that are certain to block every available inch of the park and streets. However, the "race" is scheduled and it is said that all the prominent vehicle owners will take part.

Consulted The Motor Age

The writer was greatly amused in the establishment of one of the concerns the other day. The manager was engaged in a discussion with a gentleman who appeared to be fairly well posted on a number of points in the construction of the machine. Finally he ran upon a proposition which was a trifle too deep for him. Just at that moment the salesman was called away for a few seconds and the prospective purchaser slipped to the other side of the vehicle, pulled from his pocket a copy of *The Motor Age* of June 28, which contains a very thorough description of the several types of vehicles. For several minutes he earnestly perused its pages, carefully studying the detailed drawings. Then when the salesman returned he had the point in question down fine and fairly talked the none too experienced tradesman to a standstill. All of which shows that a portion of the public is becoming thoroughly interested and that a salesman must be familiar with the workings of his machines to make a favorable impression.

On the other hand, the great mass of

casual observers, although somewhat interested, are still in the kindergarten class so far as motor-vehicle construction is concerned, and cannot tell one type of machine from another.

AUTO RACING AT ST. LOUIS

Albert Champion and Kenneth Skinner proved the chief attraction at the Missouri State Fair in St. Louis, Thursday, October 4. They were supposed to be on hand to help out the trotting races by enlivening the program, but the marvelous speed of their motor tricycles and the reckless skill displayed in their riding caught the assembled St. Louisians agape and held them enthused during the afternoon.

The occasion was what is locally termed "Big Thursday" at the State Fair, an annual city holiday and time of centering of interest and folks at the fair grounds. There were 100,000 persons in attendance. On account of possessing a much faster machine than Skinner, Champion was the hero of the day.

There were four events for automobiles, a five-mile race, a one-mile dash in which H. C. Esselstyne with a Locomobile was carded to join Champion and Skinner, a ten-mile race and an attempt by Champion to reduce his five-mile record, which he did decisively, cutting 0:12 2-5 from his old mark. In addition there was a five-mile race for ordinary automobiles, but even though the winning machine, that, guided by J. H. Dousman, of Milwaukee, covered the five miles in 12:18, the event looked so tame by comparison with the marvelous speed of the motor tricycles that few of the crowd waited to see its completion.

The first motor tricycle event, the five-mile race between Champion and Skinner, was called immediately after the first heat of the 2:10 pace. The two "warmed up" a mile before getting away, coming down to the line on exactly even terms. Past the tape, the Frenchman at first opened a slight gap, which he maintained without effort. In the back stretch the Frenchman permitted Skinner to go by him and keep in front for full mile. Skinner opened quite a gap, and there were many in the crowd,

unfamiliar with the machines, who cheered the American with the utmost patriotism. But it soon became evident that Champion was only "jockeying." When he got ready he put on more power, and his low, flat machine seemed to simply float up to and past the Bostonian. Then he would ease up again, permitting Skinner to take the lead, only to put on a little extra power and run by him when he got ready. The race was, of course, an easy victory for Champion, as were the other two. The three were much alike in the general features. In the one-mile dash the flame in Esselstyne's Locomobile went out just after the race started and he, of course, simply let his machine go on till it stopped. In this Champion took no chances. Fast as Skinner was going, about a 1:32 gait, Champion went away from him rounding the first turn, gained ground all the way and finally won by an eighth of a mile. In the ten-mile race he sat up straight in his machine, slowed it down almost to a full stop and created the impression all over the stand that it must have broken down. Then, while every one was struggling with his regret at missing the fascinating spectacle of the flying Frenchman, he suddenly ducked his head down to the handle bars and cut loose. During this bit of grand stand playing Skinner had taken a lead of three-sixteenths of a mile, but Champion made it up and was in front again in less than a mile.

In his trial against his record, Champion went away like a shot, made the first mile in 1:19, then settled into a steady pace, making the second mile in 1:19½, the third in the same time, the fourth in 1:19¾, and the fifth in 1:19¾, a total of 6:37. His best previous time was 6:49 2-5.

The automobile race was a procession. J. H. Dousman, the Milwaukee driver, took the lead from the start and raced right away from his competitors, J. D. French, Dr. A. L. Boyce and Perry Lewis. Mr. Dousman gained something like 100 yards in the first mile, but lost it through having to stop to turn the flame higher, Mr. Lewis taking the lead. When Mr. Dousman got his wagon going

again, he took the lead without trouble, and won finally by a half-mile from Mr. French, Mr. Lewis being third, about seven-eighths of a mile behind the winner. Dr. Boyce's machine got out of order in the first mile, and he withdrew from the race.

FURTHER CONCESSIONS IN BOSTON

Boston, Mass., Oct. 8.—After considering the results of a public hearing held last summer the Boston park board has voted to grant the owners of automobiles further concessions than those already enjoyed, by extending the time within which motor-vehicles shall be allowed to be driven in the park system an hour at each end. This means that automobiles may be run in the parks from 8:30 in the evening to 11:30 a. m. To The Motor Age representative Chairman Stratton, of the board, explained the policy dictating the change as follows:

"The board has considered it wise to adhere to its policy of conservatism in the matter of allowing automobiles in the parks under its control, until horses such as are used in the system shall have become accustomed to the sight of the vehicles in motion and until we have an opportunity of seeing how the vehicles are used in the parks. The principal thing we are waiting to learn, is whether the drivers of motor-vehicles observe the park road rules and keep within the speed limit."

Chairman Stratton means that a tight rein is to be kept upon the auto by the board and if there is any tendency on the part of the motorfans to "cut loose" in the park system, the board will pull them up with a round turn. At present all vehicles may not exceed a rate of ten miles an hour in the parks, which is the legal limit all over the state.

NEW YORK CLUB NEWS

New York, Oct. 6.—F. W. Tousey, a native born American, one of the charter members of the Automobile Club of Great Britain, has been engaged as the working secretary of the Automobile Club of America. He will be at the club rooms constantly to receive visitors and

will assist in the furthering of all branches of club endeavor, for which his well known experience well fits him. It was he who had the preparation and management of the famous 1,000 mile British run.

Secretary Tousey will assist in the 600-mile endurance test, which will be run after the Madison Square show in November, preparations for which are being made under the direction of I. Cumeford Martin and C. J. Field, of the Technical Committee.

There promises to be considerable friendly rivalry at the coming annual election the fourth Thursday in October. There are said to be already three or four tickets in the field. Acting President G. F. Chamberlin for various reasons will not stand for re-election.

There will be a club run after the show and President Chamberlin does not think it improbable that it may result in the much talked of speed trial between such famous flyers as those driven by Messrs. Bostwick, Davis, Winton, Fisher, Riker, Bishop and others.

Negotiations for club rooms in the Plaza Bank building have come to a sudden stop, owing to an abrupt raise of the rental figures by the bank officials. As a result quarters have been secured in the Astor Court Building, on Thirty-third Street, which will be kept until the club can carry out plans for a home of its own.

TOO STRONG A CURRENT

Editor The Motor Age:

The effusion in last week's Motor Age about the autotan who had a girl charged with electric bliss impressed me favorably but—

This may do for him, but not for me,
My "Sweet's" more highly charged, may-be.

While out one night in an automo
The cranky thing refused to go;
I thought of this poem that I had read
And I says to myself, "I've got you dead;
I've a scheme, my dear," I gaily shout.
But the gol-darned thrill burned the motor out.

F. B. H.

A NEW PUBLICATION

The Motor World is the name of a new weekly publication, "devoted to the auto-

mobile and kindred interests," which has made its appearance. It is published by the Goodman Co., at 154 Nassau Street, New York. It has an artistic cover and an attractive "make up."

NOTES OF INTEREST

Dayton, Ohio, has passed an ordinance limiting the speed of motor-vehicles to ten miles an hour.

Detroit has come up to date by the formation of an automobile club, starting with fifteen members.

A good roads convention will be held in the Los Angeles Chamber of Commerce on the 24th and 25th of this month.

A report comes from Boulder, Col., of an automobile that went from Denver to Magnolia over a road which is too steep for the average horse.

Four motor carriages to one horse drawn vehicle at Newport is the ratio given by a carriage salesman who complains that business is dull.

It is rumored that the jewelry trust has issued orders that no more horseshoe pins be manufactured, owing to the growing popularity of horseless vehicles.

The Baltimore & Ohio railroad, which has already introduced an automobile depot service at Baltimore and Washington, is about to extend it to Chicago.

A membership committee has been appointed by President C. H. Metz, of the Associated American Motocyclists, composed of Frank I. Clark, of Baltimore; A. L. Banker, of Pittsburg, and George K. Barrett, of Chicago.

The ingenious French, in their crusade against the motor-vehicle, are planning the use of cinematographs to detect auto scorchers. The plan is to have the policemen provided with the picture machines and get, at one time, a likeness of the unwary chaffeur and a record of his speed.

An automobile stage coach and mail line has been established in Speyer, Germany, and has carried 40,000 passengers in its five months of existence. Each coach will carry twenty-eight passengers, and is propelled by a benzine motor of ten horsepower. The route is ten miles, and the company has a contract with the government to carry the mails.

THE AUTOMOBILE IN WAR

A UNITED STATES GOVERNMENT EXPERT REPORTS HIS DEDUCTIONS FROM THE FRENCH MANEUVERS—MILES FAVORS THE USE OF AUTOS—IN THE GERMAN ARMY

The automobile in war is a subject that has interested all civilized governments to a greater or less degree. The opinions as to the utility of the vehicle vary. The German and French governments have been the most progressive in their experimenting with the horseless carriage in various forms, the latter giving it extensive trials in the recent maneuvers. Maj. J. B. Mott, who represented the United States at those maneuvers, had the following to say to an Associated Press representative:

An Expert's Opinion

"The maneuvers proved extremely interesting and instructive. From several points of view the extensive use of auto cars was a most striking innovation, and the results attained have fully justified the claim for their practical utility in European warfare. They did excellent work, enabling the generals and their messengers to cover great distances in a few hours.

"Auto-traction cars, moreover, facilitated the task of the commissariat department, each drawing six or seven cars, heavily laden with provisions. They have undoubtedly come to stay.

American Needs Are Different

"I, however, examined this question of military automobiles from the American standpoint, and, while fully appreciating the enormous service they render to the armies of Europe, where the highways are level and well built, and the distances comparatively small, I do not believe they would be of sufficient value on the rough American roads, and over enormous tracts of country as in the United States, to justify the heavy expense of their introduction and maintenance in the American army. Our needs differ considerably from those of the European countries. The latter must always prepare for possible war on their own soil, and their conditions favor the use of auto cars, while

the possibility of hostilities within the United States are remote, and their utility is highly problematical."

French Experiments

In France experiments have been carried on under a technical commission since October, 1897, and artillery officers are charged with the duty of following the course of the practical trials, with a view to determining what may find application in the military service.

During the maneuvers of 1898 the reservists were authorized to use automobiles, and the latter were thus subjected to test under the most varied circumstances. General Jamont, for example, after the first battle, dismounted from his horse, entered his automobile and made the tour of the cantonments of his troops, visiting on the way his principal field depot of supply. He was thus able to make in a very short time a circuit of about fifty miles and see for himself, without fatigue the exact position and condition of his command, a feat which would have been quite impossible with horses alone. The extent of modern battlefields has rendered it necessary for the commanding general to rely largely on the reports of his subordinate commanders; but the automobile may enable him, as of old, to see for himself at least the most critical part of the field.

General Miles' Opinion

General Miles is more sanguine about the future of the auto in the army than Major Mott. In his annual report to the Secretary of War he will renew his recommendation for the further use of the automobile in the army. There are now at Fort Meyer, Va., two electric vehicles, but they have not been proved quite satisfactory on account of lack of facilities for charging. They have been used in connection with kites and other signaling apparatus. Meanwhile, General Miles and other officers interested in making

the automobile useful for the army have been making investigations of other powers than electricity with a view of obtaining a practical method of making the machine available for military purposes.

Useful for Couriers

General Miles says the automobiles may be adapted for use as couriers, carrying dispatches, movement of staff officers from one command to another, for small reconnoitering parties, for investigating the topography of the country in which the army proposes to operate, for small detachments engaged in constructing bridges or establishing depots, for rapidly supplying ammunition and for the movement and care of the wounded. In fact, in cases where small detachments operate the general thinks that automobiles will be found useful.

Valuable at Headquarters

General Miles thinks that the machines at present would be best adapted to the headquarters of the army, the headquarters of the departments and in posts of considerable size. In such places the automobile will be found useful for small errands and for general utility in the matter of carrying officers from point to point in and about the headquarters of the post.

The bicycle which has been used in the army has been found very useful, especially in posts where there are no telephones. General Miles says that as the automobile is perfected it will grow in favor, and believes that as the machine is improved and perfected it will be a valuable acquisition to the army.

A wireless telegraphy outfit and one of

the three electric vehicles recently stationed at Fort Meyers are on their way to Manila, where they will be utilized by the United States army authorities in the way best suited to impress the natives. The army cable ship Burnside, which sailed from New York to Manila on September 26 carried the outfit. It is to be delivered to General MacArthur, who will use it in his trips about Manila and on his tours of inspection about the islands when practicable. This automobile is equipped with a telegraphic outfit, so that, as it runs about from place to place, it can be connected at a moment's notice with any of the military lines and used as a dispatching or receiving office.

In the German Army

In Germany every effort is constantly made to apply in the army the results of progress in industry, and automobiles have received their share of consideration. During the grand maneuvers of 1899 eight automobiles were placed at the disposition of the commander-in-chief, six of which were assigned to the different general staffs. All these vehicles were tested more particularly late in the evening and at night. On one occasion two of them were sent out in the night with a bundle of printed orders, maps, etc., with a view to having them distributed to the troops before morning. One of the carriages struck a large stone and was rendered useless. The officer in charge of the vehicle put the load of the injured carriage on the other and continued on his way, covering about sixty miles in so short a period that the papers were distributed in ample time.

STEARNS ELECTRIC VEHICLE

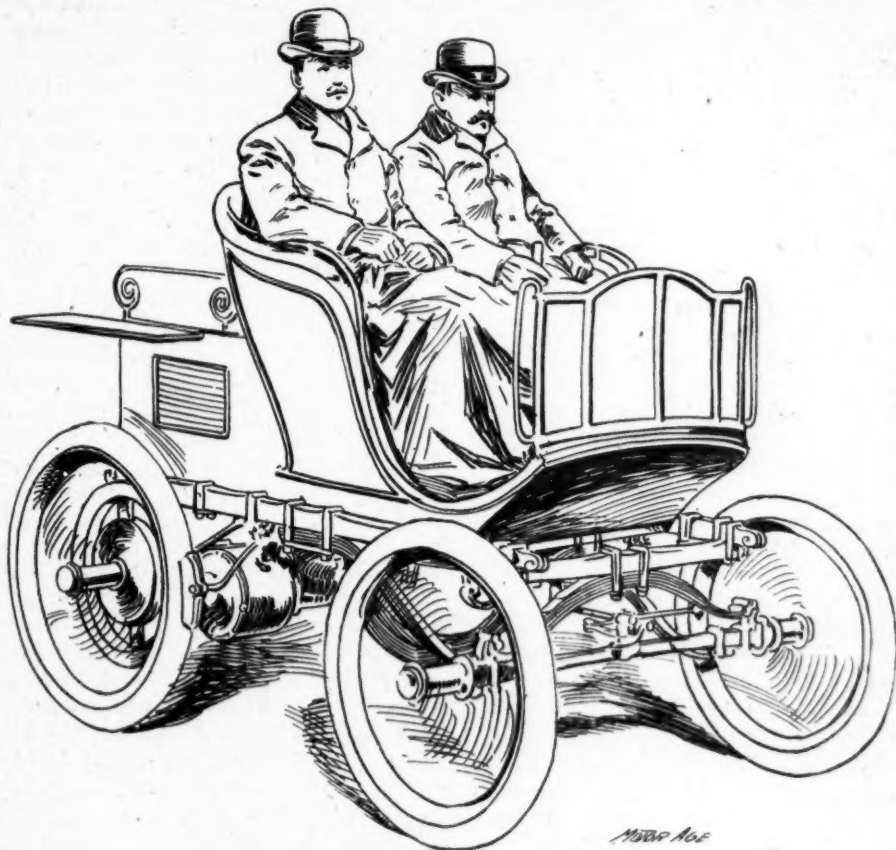
E. C. Stearns has been a prominent figure in the manufacturing world for a number of years past. He has long been known as a manufacturer of builders' hardware of the higher grades. Embarking in the bicycle business at a period when there were, as it appeared, more

bicycle factories than the demand for bicycles justified, he pushed his product to the fore in a manner that in a short time compelled recognition and established the Stearns bicycles as one of the few widely recognized makes.

For some time past he has been de-

voting his attention to the motor vehicle business. He has not confined his efforts to any one type of carriage but has investigated all types and believes that each has its field. As president of the Stearns Automobile Co., which has fallen heir to the patents of the defunct Anglo-American Rapid Vehicle Co., he will manufacture gasoline vehicles. The

of the lighter order of runabout, of the Stanhope type, with sidebars and cross-body springs. The sidebars are rigidly attached to the rear axle sleeve by forged steel through braces, and to the front axle by fore and aft quarter springs held to the side bars about mid-length by clips and to the under side of the axle by links and bolts. The sidebars are



STEARNS ELECTRIC CARRIAGE.

Stearns Steam Carriage Co. will take care of the steam interests while E. C. Stearns & Co. will build electric vehicles.

The electric runabout shown in this connection is the product of the last named company. It has been thoroughly tested in Syracuse, a city with an abundance of hills, and has been found entirely satisfactory to the makers. It embodies a number of features not common to electric vehicles. The company furnish the following details:

In design the carriage is unique, being

clipped to a front cross bar with a half-spring attached to the front axle by goosenecks and links, this form of construction affording great elasticity in accommodating the wheels to the road-bed.

The steering mechanism consists of a ball bearing knuckle joint close to the hubs of the forward wheels which are so connected with a center triangle actuated by a vertical hand lever with fore and aft movement.

Wire wheels, with three-inch pneu-

matic tires, of thirty-two and thirty-six inch diameters respectively, are used, of regular Stearns bicycle construction, with wooden rims. The hubs are seven inches long, and the wire spokes are 3-16-inch. The smaller front wheels have ball bearing hubs. The rear wheels are driven through a compensating gear placed upon the rear axle at the right side of the carriage. The shaft carrying the rear wheels and compensating gear runs upon ball bearings at four points, and has a clutch joint in its middle which admits of setting the wheels slightly nearer together at the bottom than at the top. This feature is claimed to be a strong point, and is peculiar to the Stearns carriage. By its use any sagging apart of the driving wheels at the bottom is avoided, and the wheels are given just the proper undercut to bring an equal distribution of strain upon both the inner and the outer rows of spokes.

The electric power outfit of this carriage consists of a storage battery of forty-four cells of sixty ampere hours capacity. A series-wound motor of $2\frac{1}{2}$ horsepower capable of safely withstanding an overload up to four horsepower drives the compensating gear by a rawhide pinion, the reduction being eight to one. There is a special form of series parallel controller with three speed positions, of five, eight and twelve miles per hour, forward and backward, and a charging position; also a drum brake upon the motor, all actuated by one lever at the left of the operator. The first speed is rarely used for running. At this point the controller arranges the batteries in four sets and in multiple. The second speed is about eight miles per hour, and is mostly used in crowded streets and for downtown work; at this speed the controller arranges the batteries in two sets of two parallels. The last and highest speed is twelve to thirteen miles per hour, and

is used for boulevard runs, hill climbing, etc., and at this speed all the cells are in series, giving the highest voltage obtainable.

The brake on the motor is so arranged in connection with the controller lever that the brake cannot be applied to the motor without first shutting off the current from the motor. Neither can the current be applied to the motor without releasing the brake automatically. Other features are a push-button for reversing the current to the motor, an electric gong located under the carriage and operated by a small button in the end of the handle of the controller lever, a charging terminal with double plug connection at the rear under the end of the carriage; and the usual fuse block and circuit breaker, with a plug which may be removed and the carriage left standing safely where curious people are apt to meddle with details. A combination volt and ammeter completes the electric outfit, although it is intended to add coach lanterns and a searchlight.

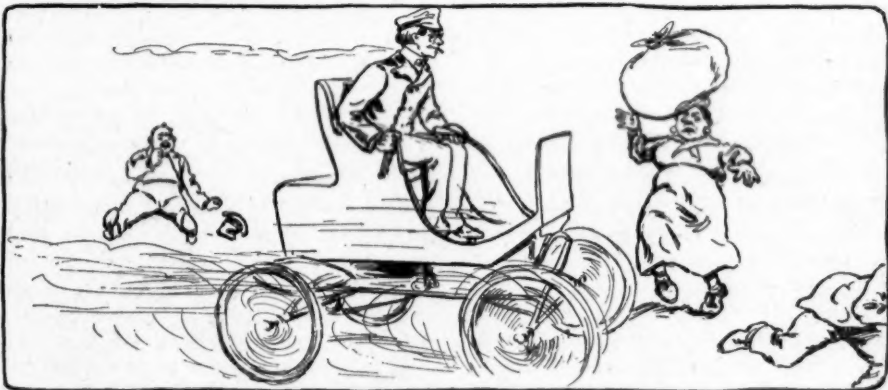
The carriage body, painted dark bronze, green, is properly of the Stanhope model with deep seat upholstered in ecru broadcloth. Most of the small parts are of nickel, the main parts of the gear being painted a rich carmine. The rear end board of the body swings outward and downward as a footboard with chain supports, and the back top hinges up to form the back of a dos-a-dos seat over the battery box, all richly upholstered and cushioned to match. The mechanical details of the carriage were built entirely in the shops of the company. The carriage has been put through a series of very severe trial runs without accident of any kind, or failure of any part, easily doing forty miles upon one charging. On a quarter-mile hill of ten percent grade, with its two passengers, it has made six miles per hour.

WHERE DOES THE BLAME LIE?

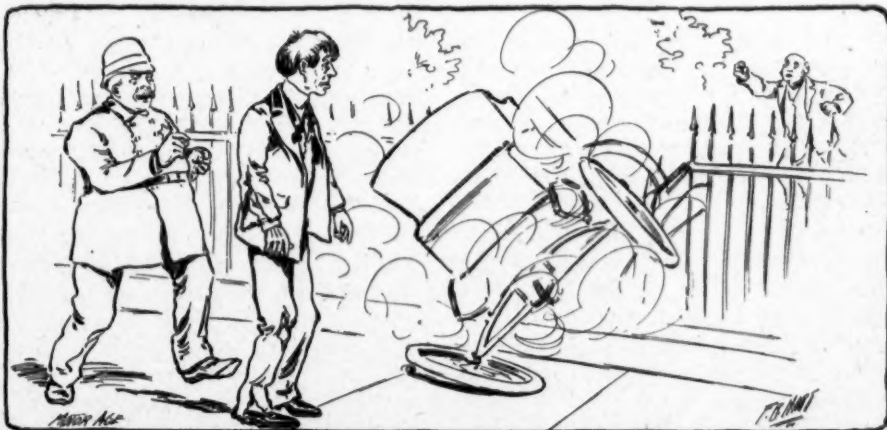
If a man who has an experience like this—



Buys an auto and starts out like this—



Is the auto to blame when he finishes like this?



CONSTRUCTION OF A MOTOR VEHICLE

THE PRACTICAL CONSTRUCTION OF A MOTOR VEHICLE ADAPTED FOR USE IN CONNECTION WITH
THE FOUR-HORSEPOWER GASOLINE MOTOR ALREADY DESCRIBED IN THE MOTOR AGE
BY L. ELLIOTT BROOKES

PART II.

It may be well to state before going further that all special parts of the mechanism of the vehicle will be fully detailed in the course of these articles, but the writer has found—from bitter experience—that it is the height of folly to attempt to make such parts as the hubs, front and rear axles, steering knuckles, steering lever, sprocket wheels, body, body springs and irons, water and gasoline tanks, lubricators, etc. Only general dimensions and outline drawings will be given for such parts. Sufficient information will be given, however, so that any reputable manufacturer of such parts can supply what is wanted. It is not the writer's idea to skimp these articles or to withhold the information necessary to build a complete vehicle, but, rather, to save the builder from himself—to save him time and money, by giving him the benefit of the writer's experience and practically compelling him to get the more common parts from firms who make a business of manufacturing such parts, and who are consequently in a position to supply them cheaper and better than the builder can make them for himself, without any discredit to the latter.

For example, the writer had a water tank, similar to the one described and illustrated in the article on the "Construction of a Gasoline Motor," made in the machine shop. It cost \$19.50, at 50 cents an hour. The next one a tinsmith made for \$3.85, and it was a better job at that. The writer has therefore come to the conclusion that the old saying "every man to his own trade" comes pretty nearly being correct.

The writer would advocate sending such parts as the transmission gearing to some large concern, near by, making a specialty of gear cutting, and have it fin-

ished up complete. It will cost less, and in all probability be a better job than a home done one.

The writer has a similar transmission gearing on a vehicle, which was made in the shop where the vehicle was built, at 50 cents per hour. The head of a firm of gear cutters and special machinists who saw it when finished, after scanning every part closely, said he would build a duplicate of it for a sum which was only about one-third the original shop cost.

The frame which carries the operating mechanism of the vehicle, and also forms the reaches between the front and rear axles, will be the first part to be taken into consideration in the construction of the vehicle.

Fig. 5 shows a plan view, a side elevation, and an end cross section of the frame, showing its general construction plainly. In the plan view, the tank supporting frame is omitted to more plainly show the frame proper, but the side elevation and end cross section show this tank supporting frame clearly. The frame, as before stated, is made up of commercial channel, angle and bar shapes, riveted together. This makes a light and yet strong construction, and forms a very rigid support for the motor and transmission gearing. The sides of the frame are of a channel section, as shown, and are curved or bent around in front of the rectangular portion of the frame, so as to come almost together at the front axle, and the front axle swivel stub is riveted in between the forward ends of these channels.

Before, however, going into the details of construction of the frame the writer would say that by far the better way, as he has found from actual experience, is to get the frame made in some structural

or architectural iron shop or bridge works, as it is a class of work which is out of the run of the ordinary machine shop, and even if built in one will be a more expensive and a less satisfactory job than if done in one of the afore mentioned places, which makes a business of this class of work, and is, consequently, equipped with the necessary tools for doing it. This, of course, is a matter for the builder to determine for himself, and therefore the writer will proceed to give all the necessary information for the proper construction of the frame.

Fig. 6 shows the bars which form the cross members of the frame proper and of the tank support. These should be of cold rolled steel in preference to the ordinary bar steel, as it is from 25 to 30 percent stiffer than the ordinary commercial bar steel, and is also straight and smooth, and practically true to size.

Fig. 7 shows the different angles which go towards making up the complete frame; Figs. 8 and 9 the connection angles for joining the different parts of the frame together, and Fig. 10 the front axle swivel stub and washer.

The bars a, b, c and d should be first got out of 2x $\frac{3}{8}$ -inch cold rolled steel. Have them cut off about $\frac{1}{8}$ of an inch longer than the lengths given in the drawing. Lay out the holes very carefully and then drill them to size and countersink, where shown, to fit the rivet heads.

The angles h and i, Fig. 7, come next in order. These angles must be planed on top to receive the transmission gear-bearing brackets after the frame is riveted up, so as to leave them $\frac{1}{4}$ of an inch thick after planing. For this purpose, 2x2x5-16-inch angles must be used. Cut them off as before stated about $\frac{1}{8}$ of an inch longer than the length given in the drawing, and drill and countersink as shown. The connection angles o and p should also be got out of 3 $\frac{1}{2}$ x3 $\frac{1}{2}$ x5-16-inch and 6x3 $\frac{1}{2}$ x5-16-inch angles respectively, and machined to about $\frac{1}{4}$ of an inch thick on the legs next to angles h and i, so as to get them exactly square. All angles in the rough from the mill are, as a rule, far from being square.

The connection angles o and p should

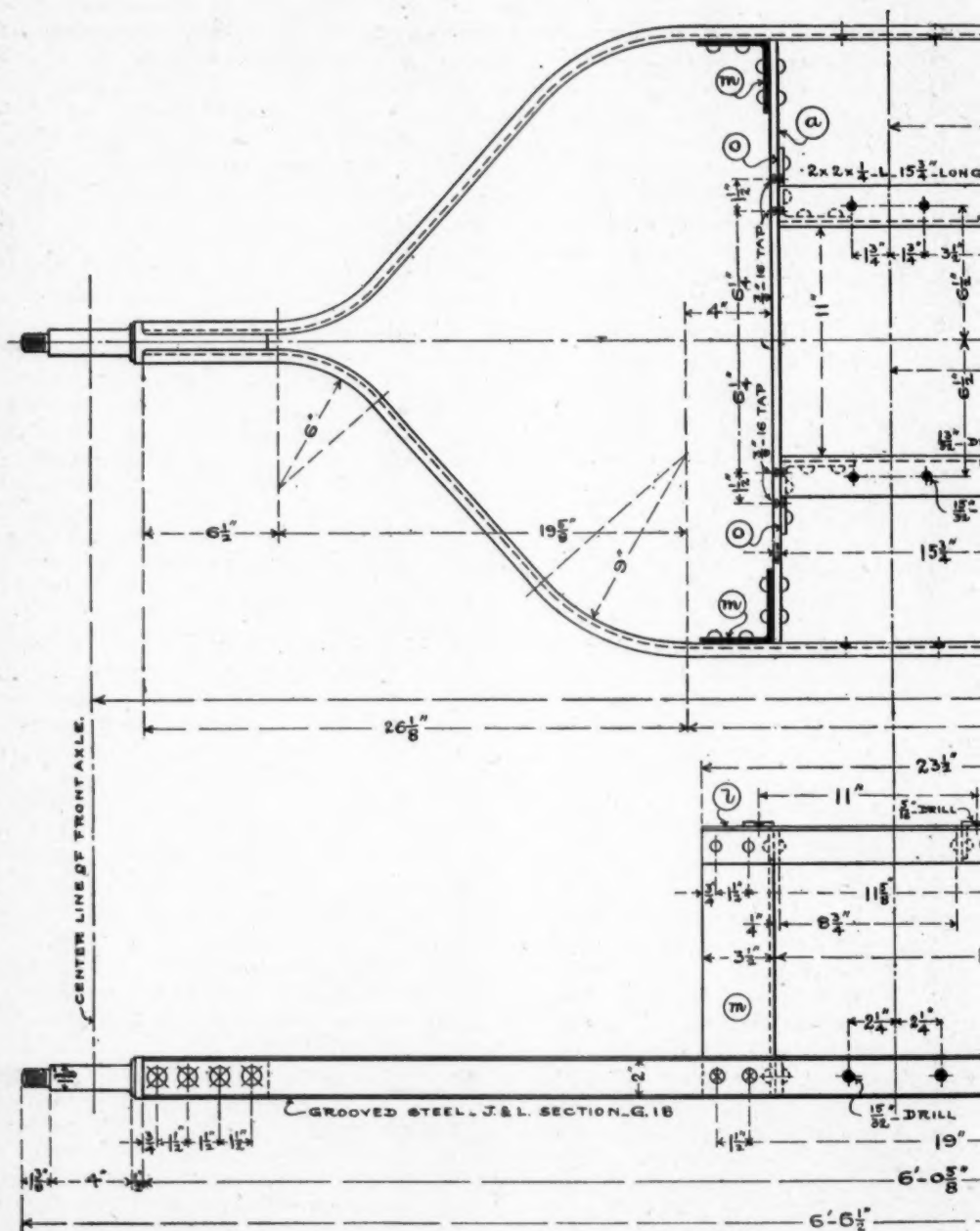
—as should all the connections—be set out 1-16 of an inch before riveting, viz., in drilling the holes in these connection angles the gauge line for the first rivet should be 1-16 of an inch farther from the back of the rough angles than the figures given, which are 5-16 of an inch thick at this time on the outstanding legs.

The top corner of these angles on the leg which connects to the angles h and i should be ground off as shown in Fig. 8, so as to fit up snugly in the fillets in the corners. They can then be riveted on to angles h and i, as shown, taking care to lay out the holes so that the ends can be machined as described. It will be noticed from the details of the angles h and i that the gauge line for the rivets is dropped 1-16 of an inch, or, in other words, the angles are elevated that much above the level of the top of the frame. This is to allow for finish for planing them after the frame is assembled and riveted up.

The flanges of the connection angles o and p after riveting on the angles h and i can now be machined to the length given in Fig. 5 in the plan view, care being taken to get the vertical legs of angles h and i perfectly square with the end connections, after machining them. The connection angles o and p of angles h and i may now be riveted to bars a and b.

For the extension forming part of the tank bracket, as well as the connection to the side bars, the angles m are used. These are made from 3 $\frac{1}{2}$ x3 $\frac{1}{2}$ x5-16-inch angles, 12 $\frac{3}{4}$ inches long, planed down to about $\frac{1}{4}$ of an inch thick, so as to get them exactly square. These, after planing and drilling, can be riveted to the ends of the bars a and b as shown in the end cross section of the frame, in Fig. 5.

The upper bars for the tank frame, e and f, should now be laid out and drilled. The connection angles q for the bar f should also be got and planed square on the outside and riveted to bar f, allowing them to project 1-16 of an inch at each end, as before stated, to allow for machining after being riveted to the bar f. The small shelf angles n, Fig. 7, can now be got out and riveted to the front bar e and the middle bar f, as shown.



NOTE.—All open holes, through or tapped, to be



1 Complete—Steel.

drilled in the frame

to be drilled in the frame, after which it assembled and riveted together.

legs only), from $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{8}$ -inch angles and drill as shown. The connection angles, of which there are eight, should now be got out. Use $3\frac{1}{2} \times 3\frac{1}{2} \times 5$ -16-inch angles and plane on one side only, outside, and locate the holes, allowing

drawing, then riveted in place to bars a and b, which are ready and waiting. This completes the rear portion of the inside part of the frame, with the exception of riveting on the rest of the connection angles r to the ends of the

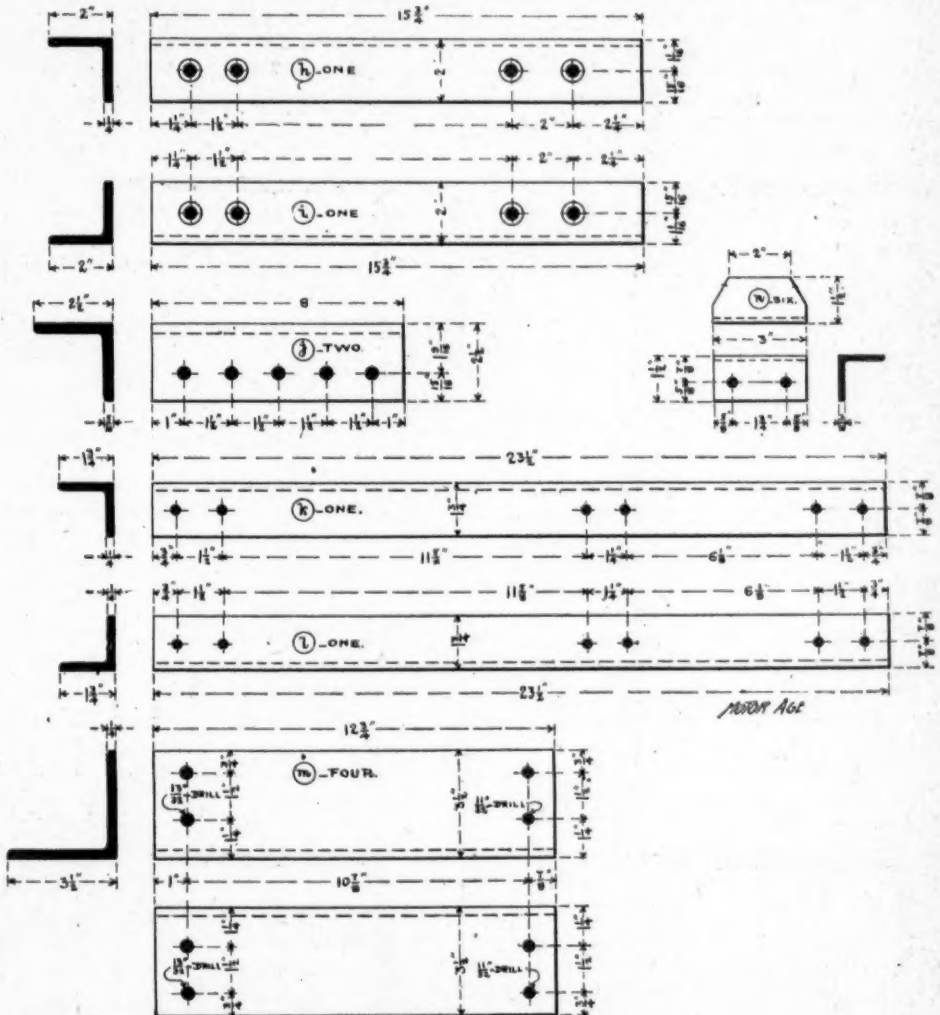


FIG. 7—FRAME ANGLES.
Steel.

NOTE—Holes in all 2×2 -inch and $2\frac{1}{2} \times 2\frac{1}{2}$ -inch angles to be drilled 13-32 of an inch; holes in all $1\frac{1}{4} \times 1\frac{1}{4}$ -inch and $1\frac{1}{2} \times 1\frac{1}{2}$ -inch angles to be drilled 11-32 of an inch; holes in $3\frac{1}{2} \times 3\frac{1}{2}$ -inch angles to be drilled as shown for $\frac{3}{8}$ -inch and 15-16-inch rivets.

1-16 of an inch for finish as before. These angles, r and the angles j, can now be riveted to bars g, which have been previously got ready. The ends of the connection angles r and bars g can now be planed off to the figures given in the

bars c and d and planing them off to length to fit the inside of the side bars, allowing the connection angles to stand out 1-16 of an inch on each end, as before described, to allow for planing off to the length given in the drawing.

It is now in order to take up the side bars. These are made from Jones & Laughlin's grooved steel, section G 18, which weighs 2 pounds per foot. Do not

load that the channel section will without turning over at the center, when rigidly supported at both ends. The channel steel is almost as easily bent as

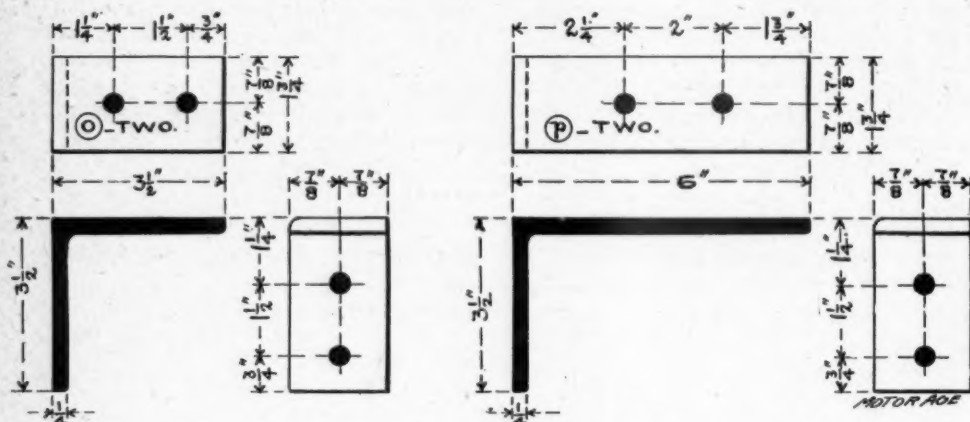


FIG. 8.—FRAME CONNECTION ANGLES.
Steel.

NOTE—Holes to be drilled 13-32 of an inch in diameter.

try to use a flat or rectangular bar section in place of this channel section, as, weight for weight, the flat bar section will not carry more than 60 percent of

a flat bar, and when it is bent it makes a 100 percent better job in every way. The writer tried the flat bar plan. The frame was completed, with water and

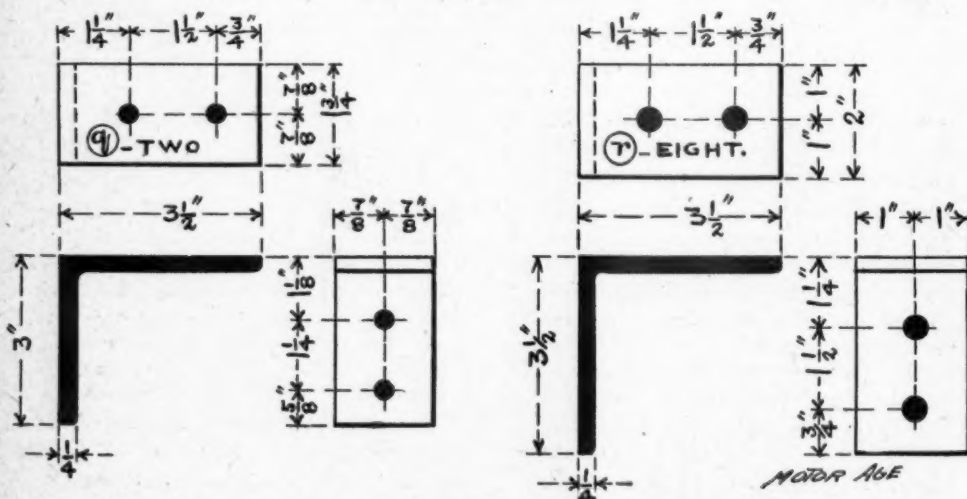


FIG. 9.—FRAME CONNECTION ANGLES.
Steel.

NOTE—The holes in the 3x3 1/2-inch angles to be drilled 11-32 of an inch in diameter; the holes in the 3 1/2 x 3 1/2-inch angles to be drilled 13-32 of an inch in diameter.

the load that this channel section will, and, further, it has no lateral stiffness to it. Under test, unsupported sideways, it will not carry even half the center

gasolene tanks and transmission mechanism in place, and the frame resting on a trestle at a point in the rear corresponding to the location of the rear

axle, and in the front was supported at the first cross bar. The frame was lifted up by the swivel, but before any decided elevation of the front end of the rectangular portion of the frame had taken place the writer had raised the swivel nearly $1\frac{1}{2}$ inches from its support and the curved portion of the side bars of the frame, near the first cross bar, were inclined about 15 degrees each, outwardly. No such thing has happened, or can happen, with the channel section on account of its greater flange width, and, consequently, greater resistance to buckling, or turning over sideways.

The side bars after being bent to shape should have the 13-32-inch diameter holes, for the $\frac{3}{8}$ -inch rivets along the

to bend the side bars, and a jig used in drilling the holes in the side bars. After the swivel stub is lined up and brought exactly central, the rivet holes should be drilled through the stub and the other side bar, and then it can be riveted in place. It will help materially—and, in fact, is really the only way to properly rivet up the frame—to bolt all the parts together before riveting, using for this purpose $\frac{3}{8}$ -inch or 5-16-inch square head rough bolts and nuts, as the case may require. The parts may then be lined up very carefully, and the bolts withdrawn one at a time, as the riveting proceeds.

If any difficulty is experienced in getting the holes to line up, when riveting

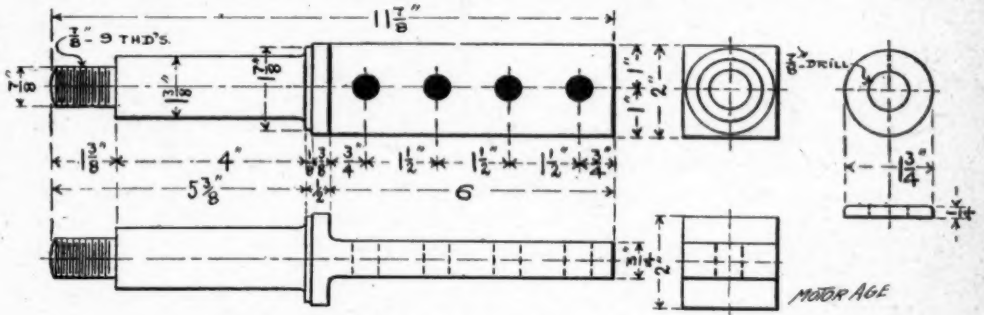


FIG. 10.—FRONT AXLE SWIVEL STUB AND WASHER.
1 each—Steel.

straight portion of their sides, drilled and countersunk, as shown. The 17-32-inch diameter holes in the front ends of the bars, for the half-inch rivets, should be left out of one bar until the entire frame is assembled and riveted together. The open holes for the secondary shaft bearing brackets and the holes for the brackets carrying the rear axle should not be put in until the brackets are ready to go in place. The side bars can now be riveted to the two cross frames. When this is done the front axle swivel stub, Fig. 10, should be clamped in place between the front ends of the side bars and lined up exactly central with the center line of the frame. If the distance given on the drawing, Fig. 5, between the front and rear axles should not come exactly right as to length, it will not do any harm. It is almost impossible to get it exact, unless a templet is made by which

the parts together—as sometimes will happen, as driving the rivets up tightly and forming the head with a cup or set, tends to flatten the parts slightly, and, consequently, to spread the holes—a drift should be used after the first rivet is driven in the connection angle. By driving it in the holes from the same side of the bar upon which the connection angle is located, the holes may be brought into line properly. This method is in common use in all bridge and structural iron works. A drift for this purpose can very readily be made out of a piece of round tool steel, $\frac{1}{2}$ of an inch in diameter and about 6 inches long. Center the piece and turn it taper in a lathe for about 4 inches of its length, until the small end is about 3-16 of an inch in diameter; round over the small end and chamfer off the corners on the large end. Heat it in a forge to a

bright red, allow it to cool until it becomes a dull red in the dark, then harden. When cold, heat again until it becomes a dark straw color, and cool off in water.

When the frame is complete, get a large square. If one is not handy, make one out of some good dry pattern lumber, in the form of a triangle, using the old-fashioned rule of 6, 8 and 10 for the base, perpendicular and hypotenuse respectively of the triangle. In this manner an absolutely perfect square can be made, even if there is no smaller square around, with which to verify it. If 6, 8 and 10 feet are considered too large for the dimensions of the square, 3, 4 and 5 feet can be used instead.

Test the frame to see that it is absolutely square. If it is not, it must be straightened, as nearly as possible. This should be done before the front axle swivel stub is riveted in place or the holes drilled for it. The frame should now be put on a planer and the top flanges of the angles, h and i, which carry the transmission gearing, planed off, as

well as the top flanges of the angles j, which carry the motor. The top face of the angles h and i should be exactly $\frac{1}{2}$ of an inch lower than the top face of the angles j. The angles h and i, when planed off, if laid out properly to the drawing, should be just flush with the top of the frame and $\frac{1}{2}$ of an inch lower than the angles j. The holes for the transmission bearing brackets and the intermediate gear shaft bracket in angles h and i, the holes in angles j, and the other open holes shown in Fig. 5, should be left until the parts to be bolted on are ready to put in place, when the holes can be marked straight through the brackets and very quickly put in by means of a small ratchet drill, if not accessible in a drill press.

The swivel stub, Fig. 10, should preferably be made from a piece of 2-inch square, annealed, tool steel of good quality. Before doing any machine work upon the swivel stub it should be very well annealed by heating to a cherry red and then left to cool, well covered up in lime, over night.

AMERICAN BICYCLE CO.'S PLANS

New York, Oct. 6.—An interview with an unnamed director of the American Bicycle Co. appeared in the Wall Street Journal, a financial publication of credibility and reputation, on Wednesday of last week. The Motor Age representative's investigation of its source shows it to have come originally from the Boston News Bureau, a financial information agency, and to have been the outcome of a talk with Colonel Albert A. Pope, who recognizes the statements in part as his own words. It has created considerable comment here. The part referring so emphatically to the future of the automobile and the company's probably large share in its development is as follows:

"The automobile will in time be the universal means of transportation and

the future of the American Bicycle Co. rests in the adoption and development of the automobile. We already have two factories making automobiles exclusively and additional factories will be utilized as the conditions warrant.

"The automobile must be developed in the same manner as the bicycle. I have such faith in the successful development of the automobile that I predict that inside of ten years there will be more automobiles in use in the large cities of the United States than there are now horses in these cities.

The demand at present is enormous and we are unable, with our facilities and capital, to supply the demand of our 30,000 agents throughout the country; fifteen thousand agents are fairly howling for automobiles. We will direct our at-

tention to the automobile costing the purchaser less than \$1,000, as that is the popular price.

The Auto Not Yet Perfect

"The automobile of today does not meet my ideal, but next year we will certainly have a machine near perfection. You will then find my stable, now holding nine horses, transformed to store automobiles and my horses sold.

"The factories we do not need for the manufacture of bicycles we are sub-leasing. Last week, for instance, we sub-leased a factory for \$22,000 a year, and this week we hope to sub-lease another at \$20,000 a year rental. These subleases are adding materially to the working capital of the company."

A Busy Storage Station

The automobile storage and supply station of Owen & Chamberlin, on West Sixty-Sixth street, has proved one of the most profitable enterprises of its kind in the country. While acting as agents for the De Dion and Winton companies much of the firm's attention is given to the storage of motor vehicles. Not only are there automobiles of local owners by the dozen, but many vehicles of visitors on tours and of manufacturers not regularly represented here in constant variety. In fact the station is at all times a miniature automobile show. The business has grown so that the entire building will soon be taken in.

At present the leading attraction is the big bus of the Woods Motor Vehicle Co., known to the trade as the Fisher carriage. It seats twelve and makes frequent trial trips through Central Park crowded every time.

A Rumor Denied

Rumor has been rife this week that the Mobile Co. of America had sold its plant at Tarrytown to the American Bicycle Co. Vice-Presidents George Pope and Theodore Merselles, of the American Bicycle Co., were seen by The Motor Age representative in the matter today. They laughed heartily and evidently sincerely

at the story and denied it in positive terms.

Fast Time in Gotham

Peter J. Fisher, demonstrator of the Oakman Motor Vehicle Co., at the request of a local daily reporter, took him a whirlwind ride through the city one day this week. The distance from Wall street to Sixty-sixth Street and the boulevard, about six miles, was covered in 18 minutes. This is remarkable time considering the crowded streets and the following route taken: Wall, Nassau, John, Cliff, Fulton, William, Spruce, Bowery, Third avenue, Twenty-second, Lexington, Twenty-fourth, Madison, Thirty-first, Broadway, Fortieth, Eighth Avenue, Sixty-sixth.

Fisher is one of the most daring auto drivers in the country. Before the era of the automobile he was a bicycle rough rider, famous for his leaping hurdles awheel. He is thoroughly acquainted with the manufacture and handling of all types of motor vehicles, and is well known as a good Samaritan to all automobilers in distress by the roadside whatever their vehicle or motor. He spent three months each year demonstrating the Oakman vehicle abroad and at the foreign shows. During this time he visited all the great automobile factories and made himself thoroughly familiar with their methods of construction.

New York Trade Notes

L. K. Bill has resigned from the American Bicycle Co. and will hereafter be associated with the E. R. Thomas Motor Co., at Buffalo. He will be in charge of the factory office there.

Edwin Oliver, a veteran in the bicycle trade, is now Brooklyn representative of the Baldwin vehicles in connection with his Cleveland bicycle agency.

Max Hurtel, inventor of the Oakman motor, who has been in town this week, left for Chicago today.

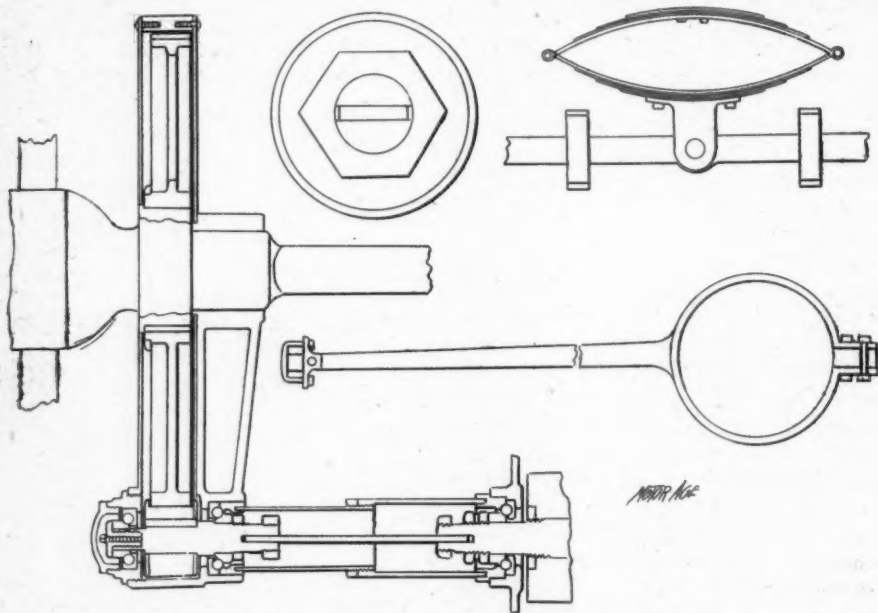
Frank W. Weston, of Elmira, N. Y., was in New York on Monday.

WEEKLY PATENT OFFICE BUDGET

ONE ELECTRIC VEHICLE WITH RIGID MOTOR SUPPORT AND FLEXIBLE ARMATURE SHAFT,
AND ANOTHER WITH FLEXIBLE MOTOR SUPPORT AND RIGID ARMATURE SHAFT
—AN AUTOMOBILE WHICH CANNOT "GO WRONG"

Of the three patents which comprise the batch of motor-vehicle patents issued October 2, two relate to the support of the motors of electric vehicles of the type in which a pair of motors are em-

The complete specifications, claims and drawings of any patents will be furnished by the patent office at Washington for five cents each. Persons sending for patents should address their letters



BACHELLE'S MOTOR FRAME AND FLEXIBLE ARMATURE SHAFT.

ployed to drive the rear wheels and to thus obviate the use of a compensating gear. The patentees of both of these are Chicago men. One is Otto V. Bache, an erstwhile amateur bicycle racing man of considerable ability, and the other is Charles A. Lindstrom, head of the mechanical department of the Hewitt-Lindstrom Motor Co., of Chicago.

The third patent relates to a vehicle whose operating parts are self-locking, and provide means for automatically braking and stopping the vehicle whenever the driver ceases to give its manipulation his strict attention. The object of the inventor is to secure safety under all circumstances.

"Commissioner of Patents, Washington, D. C.," and should enclose five cents for each copy of every patent desired, and should state the numbers and dates of the patents. Each patent described in The Motor Age is preceded by its number and date.

BACHELLE'S ELECTRIC TRANSMISSION

Letters patent No. 659,012, dated October 2, 1900, to Otto V. Bache, Chicago; motor-vehicle running gear and method of connecting motor and drive wheel shafts. Fifteen claims allowed.

This invention relates to double motor electric vehicles and has for its object to so support the motor or motors

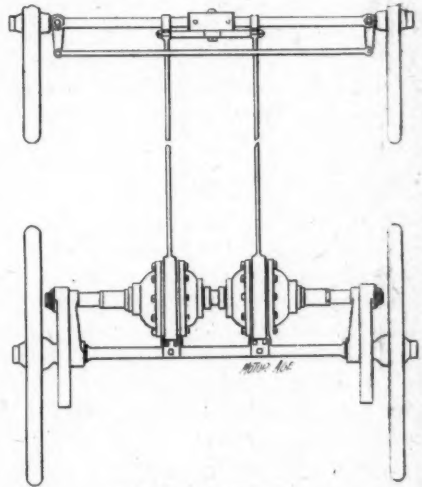
of an electric vehicle that the motor pinions will always mesh properly with the drive shaft gears regardless of the vibration of the motor frame. It further provides a simple construction of vehicle frame reaches and motor frame supports whereby the motors are independently removable and the front axle free to oscillate vertically that the wheels may accommodate themselves to irregular roadways, without being susceptible to horizontal movement.

Aside from the front and rear axles the running gear frame consists solely of two longitudinal reaches which are bolted fast to the rear axle and secured to the front axle by vertically slotted boxes that allow the axle to play up and down within them, but prevent it from turning in a horizontal plane. A cross bar between the reaches and immediately back of the front axle supports a stud upon which the axle is centrally hinged. The steering is accomplished by the usual steering knuckle mechanism.

Near the rear end of each reach is a circular band formation and within this band is clamped the armature casing of the motor used to drive the rear wheel on that respective side of the vehicle. The two motor casings are rigidly clamped together by a central barrel or tube held in place by locking rings, but each motor is provided with an independent armature shaft which extends outward that the pinion on its end may properly mesh with the rear wheel driving gear.

An arm or bracket loosely mounted on the rear axle forms the end bearing support for the armature shaft. The shaft between its double ball bearing at this point and its bearing in the motor casing is divided, and the sections coupled by means of a flat strip or blade, which is flexible. The ends of the flexible blade are mounted in slots or grooves cut in the respective ends of the divided shaft and are retained against lateral displacement by screw threaded locking rings. The blade is somewhat narrower than the slots within which it is retained, however, so that should vibration of the motor be at any time in a plane with the blade the shaft would slide or turn with

relation to the blade. The inventor, by providing sliding connections for the blade in one plane and flexible action in the opposite plane, secures the pinion on the outer end of the armature shaft against vibration transmitted from the motor. He asserts that the pinion is thus constantly kept in smooth running mesh with the gear, it being retained by the bracket previously described as being hinged to the rear axle. This same bracket carries a casing which covers the entire gearing and bearing group of



Bachel's Motor Frame.

parts. A two-piece, separable sleeve, connected at one end to the motor casing and at the other to the gear casing, covers the armature shaft. The accompanying illustrations clearly show the relation of the parts and the construction of the various bearings.

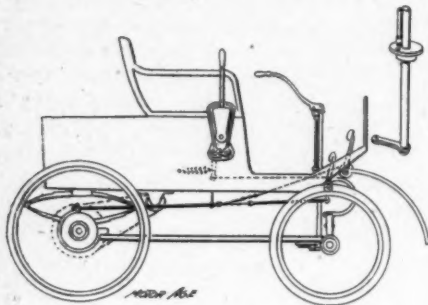
WHOLE THING WORKS BACKWARD

Letters patent No. 659,078, dated October 2, 1900, to Charles A. Lieb, New York City; motor-vehicle controlling mechanism. Ten claims allowed.

This is a machine whose mechanism works backward—if it works at all. Every member of the driving gear and of the controlling device is locked. The brake is always set and locked. The motor controlling valve is always locked against being opened. The steering post

is always locked against movement. Everything is locked.

When it is desired to start the vehicle the brake must be unlocked and re-



Lieb's "Wonder."

leased; the motor valve lock must be unlocked; the steering lever post must be unlocked. Then it is possible to start the machine and it may be kept running as long as the driver is careful not to relieve hand and foot pressure from the various spring locks, which would then jerk steering lever, motor controller and brake back into their normal positions and stop everything.

If the driver takes his hand from the steering lever to light a cigar the steering lever flops around centrally and locks itself with the vehicle running straight ahead. If the driver accidentally removes his foot from a certain lever the brake would set, and the motor would cease motoring and the vehicle would stop. Then, in addition, a fender across the front of the vehicle is so connected with the various locks that should it be touched, as when a policeman is being run over, the whole sheebang stops still in the middle of the street and the driver must go through the entire unlocking process to get her a-moving once more. This fender also affords the small boy a chance to get in his work, if he works quickly enough to save being pitched against the curb during the operation.

It is a fine vehicle. The inventor states that it is a safety vehicle. The driver can fall asleep, become drunk, slash his throat, fall into the street or cut any other unseemly caper and the auto will pull itself upon its haunches and stop

silent-like and stately, in the middle of the street.

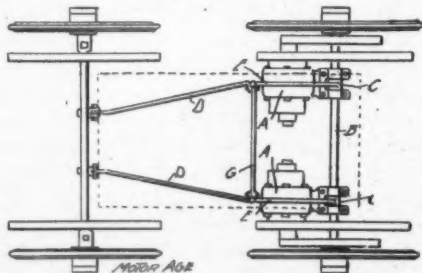
All this is accomplished thus.

The steering handle is hinged to the top of the post and is provided with a vertical rod which normally engages a hole in the post guide plate on the floor of the vehicle. When the rod is in this hole the steering post cannot turn and the wheels are set straight ahead. To turn the vehicle the operator must raise the lever to free the depending rod from its lock. If he lets go of the lever at any time, springs connected to the steering knuckle links draw the steering gear to its central position and the handle locks itself.

The brake remains normally set because of a strong coil spring, while the handle which controls the motor valve is normally locked by a pair of jaws which cannot be opened except by pressure on a foot plate, which also unloosens the brake. The fender at the forward end of the machine is connected to the brake release link and to an auxiliary motor valve so that when it is pushed backward it shuts off the motor and throws the brake lock into operation. A careful study of the accompanying side elevation of this vehicle will produce a strong desire to buy the patent—for a curiosity.

HEWITT-LINDSTROM RUNNING GEAR

Letters patent No. 659,080, dated October 2, 1900, to Charles A. Lindstrom, Chicago, assignor, by direct and mesne as-



Hewitt-Lindstrom Motor Support.

signments to the Hewitt-Lindstrom Motor Co., same place; supporting frame for motors of electric carriages. Twenty-four claims allowed.

The object of the invention is to mini-

mize the vibration of the motors of a double-armature electric vehicle. Each of the armatures is confined within a circular hood or band A, secured to the rear side of which is an arm B. This arm is hinged upon the rear axle by a two-part journal, between the sections of which is the knuckle C of the down-turned rear end of frame reach D. This construction is, of course, the same for each of the two motors. The frame reach D extends forward in a horizontal direction across the top of the motor supporting band A and about midway of its length is bent downwardly to bring its front extremity to the plane of the front axle. A short lug E extends from the forward side of the ring A and to it is hinged the lower end of a bolt F. The bolt F passes

through a vertical hole in the reach bar D and carries, one upon either side of D, two balancing coil springs. The motor support or bracket is thus as a whole hinged to the rear axle and possessed of a limited amount of resiliency to overcome some of the jar of the vehicle without interfering with the correct engagement of the armature shaft pinions and the rear axle drive gears.

The two frame reaches D are also hinged to the front axle tree and the brace G, between them, has hinged connection. The entire running gear frame thus has a certain amount of flexibility which permits the frame to adapt itself, within ordinary limits, to the movements of the wheels when irregular surfaces are being traversed.

NEWS OF THE MOTOR INDUSTRY

CLEVELAND TRADE NEWS

Cleveland, Oct. 8.—The steam type of vehicle is bound to be a winner in the Ohio metropolis. Evidence of this is already shown in the interest taken in this variety of machine. Both the Cleveland Automobile & Supply Co. agent for the Locomobile and Frank Lamkin, agent for the Mobile, say that the attention is all towards these machines and although both stores have been opened less than a month, each has disposed of several and there are any number of deals under way which will "pan out" in the spring if not this fall. It is the bicycle game all over again. People who are really interested and expect some day to become purchasers want to know all about these machines. Now that there are two or three rival machines on the market, it is no longer possible to say "This is an automobile" and let it go at that. Any number of people are visiting first one store and then another and the proprietors of the two establishments are keeping busy showing up the talking points of the two machines.

The Otto Konigslow Co., of this city, will shortly announce a complete automobile running gear of the pattern used on the majority of steam vehicles, including wheels, differential and steering handle, but without tires; either black or finished as desired and suitable for any type of power. For some time this concern has been producing cups, cones and other fittings for the automobile trade. It has done considerable experimental work with a gasoline vehicle and will probably manufacture this type of a machine eventually, although for the present it will confine its efforts to running gears.

A New Winton Catalogue

The Winton Motor Carriage Co. of Cleveland, has issued its third annual catalogue. It is neat, well gotten up and a credit to its author, Advertising Manager C. B. Shanks. The book gives a very complete and comprehensive description of the make-up and operation of the Winton hydrocarbon vehicle, as well as many pointers as to the operation of automobiles in general. Two

pages are devoted to interior views of the Winton company's factory, showing that the machine is Winton home production from the ground up; also showing that the capacity and output of the concern is far beyond the experimental stage. The book is replete with pointed sayings from customers in all parts of the country. One enthusiast says he has traversed all parts of the Allegheny mountains without finding an unsurmountable hill. Another says his machine has cost him \$4 for repairs during the past eighteen months. Another, who has used all three systems, says he prefers his Winton to anything he has seen. Several ladies bear testimony that they handle machines without difficulty, while a number of owners say they have yet to find a hill they could not climb. Perhaps the most unique recommend is from a gentleman who says he went hunting in his Winton and bagged eighteen birds in two hours; the machine was not afraid of the gun and he only had to leave his seat to secure the birds.

Manufacturers of motor vehicles or cycles who are prepared to place agencies and who have anything to show will have little trouble in closing for their goods in this city, as the better class of bicycle dealers are fully convinced as to the possibilities of the new business and are anxious to handle almost anything practical in the way of a vehicle that will go by itself. The Quilling Bros. the Loomis Cycle Co., H. S. Moore and several other concerns are in correspondence with manufacturers and hope to have something in that line to show during the coming winter.

The McIntosh-Huntington Co., the George Worthington Co., W. H. Leutkemeyer & Sons and other jobbing houses are preparing to offer automobile parts, fittings and sundries and will occupy the same position in the new line that they have in the bicycle business in years past.

The Peerless Mfg. Co. is the first of the local concerns in the bicycle trade to experiment with motor cycles. The company has secured a contract to build a number of motor tricycles equipped with

the De Dion type of motor and will have the first machines completed in the near future. Considerable attention will be devoted to this work this winter.

The local branch of the Hartford Rubber Works Co. finds the sale of motor vehicle tires rapidly increasing, and a very important factor in its business. The number of manufacturers and experimenters in this city is rapidly increasing and as the Hartford store carries a very complete line of tires, it comes in for a very large proportion of the business. The repair department of the establishment has almost a monopoly on automobile tire repairs as it is equipped to take care of this work on short notice, rendering it unnecessary for local factories and vehicle owners to go to the trouble of sending tires to the manufacturers for repairs.

SOLID TIRES IN BOSTON

Boston, Mass., Oct. 8.—The pneumatic tire for anything but the lightest motor-vehicles is having a hard row to hoe just now in Boston, whose granite paving and rough macadam roads, plentifully besprinkled with glass, have proved detrimental to the life of the best pneumatics. The New England Electric Vehicle Transportation Co. is fitting all its cabs and delivery wagons with solid tires. Manager Neffel, of the company, says that he has never been able until recently to get the kind of solid tire needed for heavy work. The new tire used on the cabs gives a section of three inches of solid rubber between the felly and the pavement, which gives all the protection necessary to the batteries. The heavy items of repairs to the pneumatics is almost entirely done away with by the solid tire, while the added cost of power is not nearly equal to the former expenses of repairs and replacement.

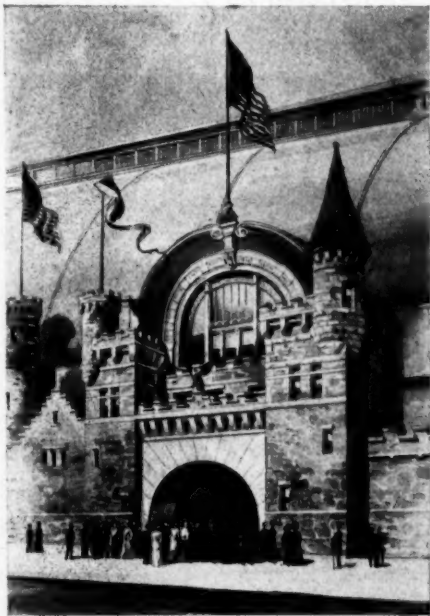
It was found that a pneumatic tire that would be good for 3,000 miles in and around Newport was good for only about 500 miles in Boston. The car tracks in Boston are three inches above the paving in some places, and the pneumatic tires were found to cut badly on the edges of the rails. Boston uses a grooved rail

almost exclusively, having discarded the strap and T rail when electric cars were introduced, and the inner edge of the groove is very sharp.

The asphalt era is also upon us and a mile or more of the main streets are being paved with sheet asphalt, so that now the cab company is experimenting with sectional tires, which are said to prevent some of the slide slip on greasy asphalt. They are being tried on the steering wheels of the heavier vehicles and will be used all around if found satisfactory.

THE MOTOR AGE EXHIBITION

The dates for the automobile exhibition, being promoted by the publishers of the Motor Age, are March 18 to 25, inclusive. The promoters, being inter-



Entrance to Chicago Coliseum.

ested in the industry in a manner far more stable than that of merely giving an exhibition for the purpose of making money, may be depended upon to guard the interests of exhibitors. The building where the exhibition will be held is the Chicago Coliseum, located less than a mile from the business center of the

city and accessible by various lines of transportation. The building, of which the accompanying illustration shows the entrance, was constructed solely for exhibition purposes and is admirably adapted to the purpose. It has a floor space considerably in excess of that of Madison Square Garden, as well as ample seating capacity.

The plan of the building readily adapts itself to an automobile exhibition. A track, twenty feet wide and nearly 500 feet around, will be installed for showing the paces of the various vehicles. This is wide enough to allow of three abreast and will afford ample space in which to demonstrate the advantages of the different makes. The exhibition spaces will be located both inside and outside this track. The inside will be reached from either end by a broad pair of stairs leading down from the spacious gallery, where there is ample room for spectators to rest and to view the vehicles on the track while not making a closer examination. The aisles will be of ample width to prevent crowding.

A CARRIAGE MAN'S WAIL

"If there is one town in this country which has gone automobile crazy it is Newport," said a traveling man to a group of associates in a downtown commercial club the other day, says the New York Tribune. His line is blooded horses and fine carriages. Consequently he looks into the automobile business wherever he goes. He had just returned from Newport.

"They have turned Bellevue Avenue into a speedway," he continued, "and there are four automobiles to every team. The makers have been reaping a rich harvest, and almost every other building on the street covers an 'auto' store, while 'mobile stables' loom up on every side. There are several big families over there which have a machine for every member of the family, just as each one used to have his own horse. You can count a half dozen autos of different makes in a single big yard. They run them up against a tree when they are not in use, and make their grounds look like a rail-

road terminal. They are discharging their coachmen and grooms and taking on expert electricians and engineers.

"It takes an alarm of fire, however, to show what Newport can really do in the way of an automobile turnout. There was one while I was there. Bells began to ring and whistles were blown all over the city. With almost the first sound of alarm there came the sharp clang of gongs in several directions, and I marveled at the efficiency of the local fire department. I was mistaken. It was not fire engine gongs at all, but auto bells in the hands of the reckless rich. All of the machines which were on the road at the time formed the first batch. Later on, but before the fire department had reached the scene, came a host of autos which had been quickly put into commission. Some of them were in charge of finely gowned women. They blocked every street in the neighborhood of the burning building, and the poor firemen had a hard time getting their lines of hose through the throng."

MAKERS OF RELIABLE SPOKES

The Standard Spoke & Nipple Co., of Torrington, Conn., with Chicago offices at 40 Dearborn Street, have long been known as supplying almost the entire bicycle trade with spokes. They have placed on the market spokes for automobiles in various sizes to meet the requirements of the different weights of vehicles and sizes of wheels. The illustration of a vehicle spoke, shown in their advertisement on another page, was made by the direct photographic process from a sample of their wares. It is almost needless to say that, with their experience, they produce absolutely the best spoke that it is possible to make.

EXHIBITORS AT MADISON SQUARE

The following is the complete official list issued this week of the concerns which have taken spaces for the coming show at Madison Square Garden:

National Automobile & Electric Co.
Riker Motor Vehicle Co.
Winton Motor Carriage Co.
Baker Motor Vehicle Co.

DeDion-Bouton Motorette Co.
Autocar Co.
Foster Automobile Mfg. Co.
Automobile Co. of America.
Woods Motor Vehicle Co.
Stanley Mfg. Co.
Locomobile Co. of America.
Canda Mfg. Co.
American Electric Vehicle Co.
Daimler Mfg. Co.
Waltham Mfg. Co.
American Bicycle Co.
Electric Vehicle Co.
Holyoke Automobile Co.
Knox Automobile Co.
Overman Automobile Co.
International Motor Carriage Co.
New York Motor Vehicle Co.
Trinity Cycle Mfg. Co.
John T. Robinson & Co.
Steam Vehicle Co.
Peerless Mfg. Co.
Springfield Cornice Works.
St. Louis Motor Carriage Co.
Cunningham Engineering Co.
Buffalo Electric Carriage Co.
Hayes-Apperson Co.
Jos. Dixon Crucible Co.
C. J. Downing.
Diamond Rubber Co.
C. F. Splittorf.
Gray & Davis.
Veeder Mfg. Co.
Rose Mfg. Co.
B. F. Goodrich Co.
Charles E. Miller.
Dow Portable Electric Assistant Co.
New York Tribune (Mobile).
Pennsylvania Automobile & Gear Co.
Goodyear Tire & Rubber Co.
Gleason-Peters Air Pump Co.
Consolidated Rubber Tire Co.

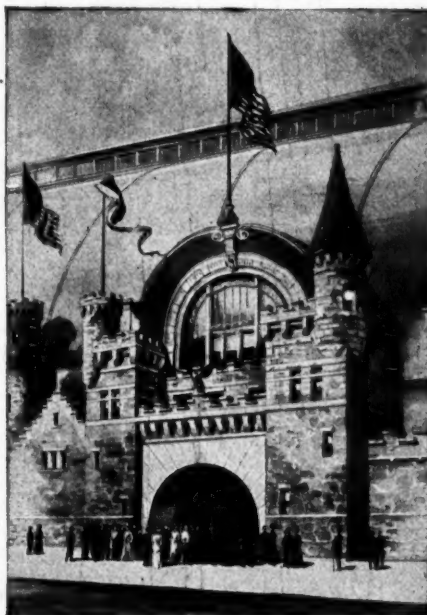
CUPID AND AUTOMOBILES

Cleveland, Oct. 3.—The Winton Motor Carriage Co. is said to be building a special pure white vehicle, which when completed will place Vanderbilt's famous "White Ghost" in the shade. Furthermore, it is reported that this vehicle will be striped with gold and decorated with roses and cupids. The writer cannot vouch for this, but rumor will have it so.

The other day when The Motor Age representative was shown into the sanctum of Advertising Manager C. B. Shanks, he found that gentleman wreathed in smiles. The smiles continued throughout the entire interview. Mr. Shanks is an old newspaper man and his news gathering instinct always gets the

FIRST ANNUAL

Automobile Show



The Coliseum, CHICAGO
March 18 to 25, 1901

FOR DETAILS ADDRESS

THE MOTOR AGE, Monon Building, CHICAGO

better of him when he meets another scribe. Generally he opens with: "Well, what is new today?"

But this time the Age was startled to find himself greeted with: "Say, are you married?"

The Age plead guilty.

"Well, do you think that two can really live as cheaply as one?"

"What has that to do with auto—?" began the astonished news seeker.

"Never mind," was the retort. "I want to know if you honestly consider marriage a failure?"

Not being especially interested in a discussion of matrimonial ventures, the writer hunted up another official of the company, from whom he learned that Mr. Shanks had not been wholly responsible for his actions during the past few days.

It seems that cards are out for the marriage of Miss Nellie Ford to Mr. Charles B. Shanks, the ceremony to take place Monday evening, October 15, at the home of the bride's parents on the West Side, this city.

May there never be any occasion to paint that machine black.

TIRE BUSINESS LIVELY

Akron, Ohio, Oct. 1.—Akron people who have been apprehensive that the falling off in the bicycle business would seriously injure local industries which produce bicycle tires, may have their fears dispelled by the statement of a prominent rubber company man:

"That the rubber trade has not suffered from this cause is evident from the fact that there are more rubber mills today than ever before," he says. "They are using more rubber and making more goods and making money in spite of high prices of raw material," he said. "Ultimately the bicycle trade will be on a sounder basis and prices will be stable. The output will keep pace with the demand, and the rubber factories will furnish the tires as heretofore. The tires to be made for automobiles will far more than counterbalance the decrease in tires made for bicycles."

BRIEF NEWS OF THE INDUSTRY

The Durant McLean Co., dealers in bicycles and automobiles at 229 Broadway, New York, with a branch in Brooklyn, have made an assignment.

J. S. Conwell, manager of the Waverley automobile plant of the American Bicycle Co. at Indianapolis, was presented with a magnificent silver service by the employees of the plant on the occasion of his leaving to take the presidency of the Wilkie Mfg. Co., of Anderson, Ind.

It is reported that the New Haven (Conn.) Electric Cab Co. is about to substitute busses of lighter construction than those now in use, which are said to be too heavy for satisfactory service on rough pavements, although they have averaged seventy miles a day for the past two months.

It is reported that Thomas B. Jeffery, one of the pioneer bicycle makers of America, and head of the Gormully & Jeffery branch of the American Bicycle Co., where extensive experiments in automobile construction have recently been completed, is about to retire from active business. His son, Charles T. Jeffery, will remain actively in the business, however.

MISCELLANEOUS

Advertisements under this head 5 cents per word, cash with order. Express orders, post office orders, or postage stamps accepted.

FOR SALE

FOR SALE—New Side Steering Locomobile number two; in perfect order; used but thirty days. H. C. FENN, Sioux Falls, S. D.

FOR SALE—The Automobile Storage and Repair Co., 57 West 66th St., New York, have new and second-hand steam, gasoline, and electric carriages constantly on hand and have always some special bargain.

AUTOMOBILE RUNNING GEARS FOR THE TRADE



We make two styles complete with the proper pivoted steering device, compensating gear, springs, and wood wheels.

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THE
CONSTRUCTION
OF A
Gasolene Motor

FOR
AUTOMOBILE USE

BY L. ELLIOTT BROOKES.

Published by THE MOTOR AGE, 324 Dearborn St.,
Chicago, and 150 Nassau St., New York City.

Price, in Paper Covers, \$1.00

To Yearly Subscribers to The Motor Age, 50c.

This book is the reproduction of a series of articles recently published in The Motor Age, giving a complete description of how to build a four-horsepower, two-cylinder, balanced gasolene motor for use in automobiles, and includes

COMPLETE WORKING DRAWINGS.

The demand for back numbers of The Motor Age containing the earlier articles of the series has been so great as to have already exhausted the reserve copies, hence the publication in book form. There has also been a sufficient number of inquiries for

BLUE PRINTS

That such have been prepared—full size, of course—and are now on sale. The price, including a copy of the book of instructions, is \$7.50.

Arrangements have been made with a reliable foundry to furnish complete sets of castings of the motor, either in the rough or partially finished.

HOT AND COLD ROLLED STEEL STRIPS

We are prepared to furnish mill shipments promptly and at prices which will interest you. Send specifications for our quotations.

NEW YORK OFFICE:
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CHICAGO OFFICE:
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ATTENTION

Complete sets castings for constructing a 4 H. P. gasoline motor as described in recent issues of this magazine. Rough or machined, with steel screws, cut gears, valve forgings etc. Carbureters, sparking plugs, coils and accessories. Also bicycle motors and castings of same. Correspondence solicited.

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FOR MOTOR VEHICLES



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VEHICLE JOURNAL** A Record and Review of
Applied Automatic
Locomotion.

—FOUNDED 1896—

The Semi-Official Organ of the Self-Propelled Traffic Association, the Liverpool Centre of the Automobile Club of Great Britain and Ireland. Subscription, \$1.80 (7s) per Annum, post free. New volume commenced with Oct. 1899. "The impartial and technical monthly, the Automotor," —London Daily Mail. Publishers and Proprietors, F. KING & CO., Ltd., 62 St. Martin's Lane, London, England

The Autocar

A Journal Published in the
Interests of Mechanically propelled Road Carriage.

EDITED BY HENRY STURMEY

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WHAT ARE THEY AND
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Through their agencies, through the use of technical language, and a series of
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ALL SIZES.

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BEST GRADE.

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WE MANUFACTURE

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in all sizes and
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BodiesStylish
Well Made
and
Correct...

For Motor Vehicles

Dixon's Pure Flake Graphite Lubri-
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Gears, Bearings, etc. Nothing can
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JERSEY CITY, N. J.What is
doing in **AUTOMOBILISM?**

All who are interested in that question should consult the

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which each month reviews the progress of the new
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MALLEABLE CASTINGS

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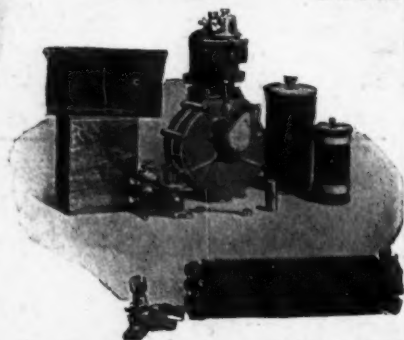
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—AGENTS FOR CLOTH AND SILK MILLS—

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								Tuesday
								Wedn'day
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Saturday								
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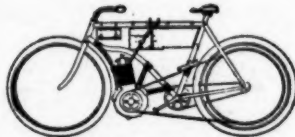
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THE MOTOR AGE

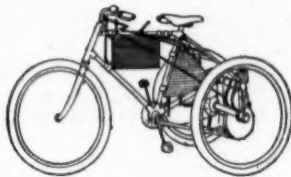
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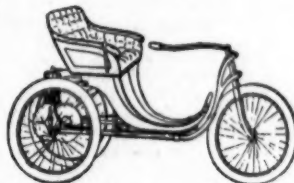
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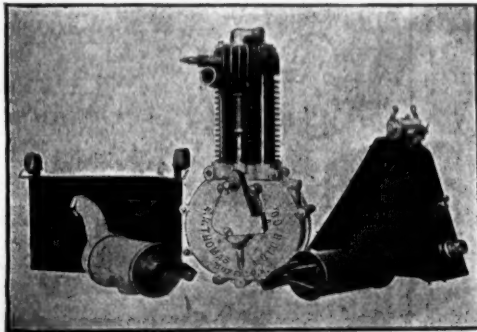
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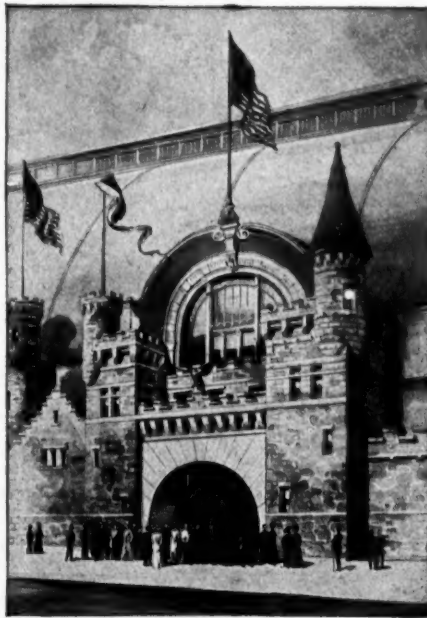


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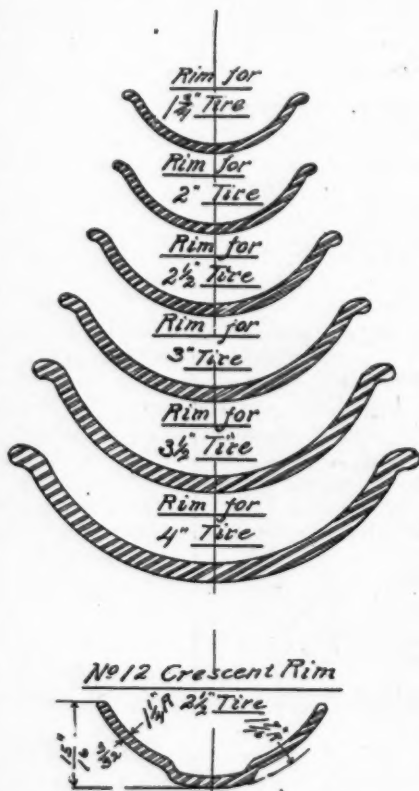
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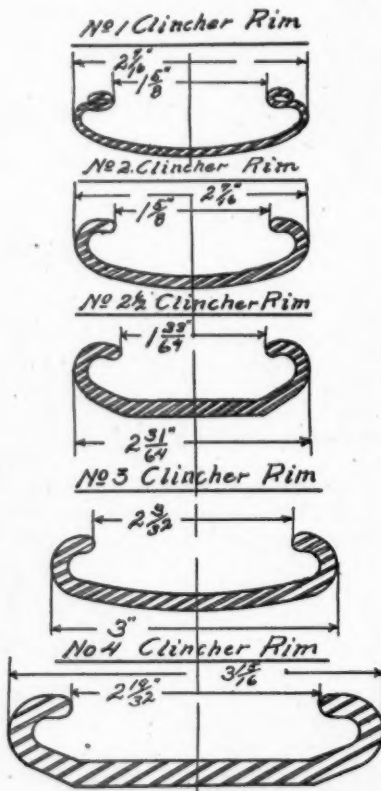
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